

E N V I R O N M E N T A L S T U D I E S P R O G R A M

ECHM-P-BSH

SSP ENVIRONMENTAL SCIENCE CHEMISTRY PROGRAM REQUIREMENTS

2021/2022

Advisor: Dr. Stephen Brown, BioSciences Rm. 3130, email: stephen.brown@chem.queensu.ca

The four-year B.Sc. (Honours, SSP, Environmental Chemistry) requires a minimum of **120.0 units** in total.

Core Science & Social Science Courses: 87.0 units	Completed
3.0 units from BIOL 111 (Ecology) or BIOL 103 (Intro. Biology of Organisms)	
6.0 units from CHEM 112 (General Chemistry)	
6.0 units from GPHY 101 (Human Geography) and GPHY 102 (Earth System Science)	
3.0 units in GEOL 104 (The Dynamic Earth) or GEOL 107 (History of Life)	
6.0 units from MATH 111; MATH 120; MATH 121; (MATH 123 and MATH 124)	
6.0 units from PHYS 104 (Fundamental Physics); PHYS 106 (General Physics); PHYS 107 (Intro Physics)	
18.0 units in CHEM 211 (Main Group Chemistry), CHEM 212 (Principles of Chemical Reactivity), CHEM 213 (Introduction to Chemical Analysis), CHEM 221 (Materials, Solutions & Interfaces), CHEM 222 (Methods of Structure Determination), CHEM 223 (Organic Reactions)	
12.0 units in CHEM 311 (Mechanistic Organic Chemistry), CHEM 312 (Transition Metal Chemistry), CHEM 323 (Biological Chem), CHEM 326 (Survey of Environmental Chemistry)	
3.0 units from CHEM 321 (Instrumental Chemical Analysis) or ENSC 371 (Environmental Analysis Methods)	
6.0 units in CHEM 397 (Experimental Chemistry)	
6.0 units in CHEM 497 (Research Project)	
3.0 units in ENSC 103 (Environment and Sustainability)	
3.0 units in ENSC 390 (Sustainability)	
6.0 units from ENSC 430 (Honours Projects in Environmental Sustainability) or ENSC 501 or ENSC 502	
Option Courses: 15.0 units	Completed
3.0 units from ENSC Specialization Options A: BIOL 102 (Introductory Biology of Cells), BIOL 103 (Introductory Biology of Organisms), BIOL 335 (Limnology and Aquatic Ecology), ENSC 301 (Ecological Assessment), ENSC 320 (Wildlife Issues in a Changing World), GPHY 310 (Landscape Ecology), GPHY 318 (Biogeography)	
3.0 units from GEOL	

<p>3.0 units from BIOL 200(Diversity of Life); BIOL 212(Scientific Methods in Biology); ENSC Specialization Options B: BIOL 335(Limnology and Aquatic Ecology), ENSC 201 (Environmental Toxicology and Chemical Risks), ENSC 301(Environmental Assessment), ENSC 307(Marine Environmental Issues), ENSC 320(Wildlife Issues in a Changing World), ENSC 407(Global Water Issues), ENSC 425(Ecotoxicology), ENSC 471(Environmental Analysis Methods), ENSC 480(Special Topics in Environmental Science), ENSC 481(Special Topics in Environmental Science II), GEOL 106(Environmental Geology and Natural Hazards), GEOL 107(History of Life), GEOL 200(Oceanography), GPHY 207 (Principles of Biogeography), GPHY 209(Principles of Hydroclimatology), GPHY 304(Arctic and Periglacial Environments), GPHY 306 (Natural Environmental Change), GPHY 312(Watershed Hydrology), GPHY 314(Climatic Change), GPHY 317(Soil, Environment & Society), GPHY 318(Advanced Biogeography), GPHY 319(Bioenergy & Biorefining)</p>	
<p>3.0 units from ENSC Interdisciplinary Social Science and Humanities: CHEE 342 (Environmental Biotechnology), CLST 214 (Ancient Science), DEVS 220(Intro to Aboriginal Studies), DEVS 221(Topics in Aboriginal Studies), DEVS 250 (Global Environmental Transformations), ENSC 200(Environmental History), ENSC 290(Intro. To Ecological Economics) or ECON 290(Intro. to Environmental Economics), ENSC 301 (Environmental Assessment), ENSC 305(Social Environments), ENSC 307(Marine Environmental Issues), ENSC 310(Environmental Policy), ENSC 315(Global Food Security, Agriculture and Environment), ENSC 320 (Wildlife Issues in a Changing World), ENSC321(Environmental Justice), ENSC 407(Global Water Issues), ENSC 420(Gender and Environments), ENSC 482(Special Topics in Environmental Studies), ENSC 483(Special Topics in Environmental Studies II), GPHY 336(Geography, Environment & Human Health), GPHY 339(Medical Geography), PHIL 203 (Science and Society), PHIL 293(Humans and the Natural World), PHIL 310(Development Ethics), PHIL 493(Ethics and the Environment), RELS 235(Religion and Environment)</p>	
<p>3.0 units from ENSC Interdisciplinary Humanities: CLST 214 (Ancient Science); DEVS 220(Intro to Aboriginal Studies); DEVS 221(Topics in Aboriginal Studies); PHIL 203 (Science and Society); PHIL 293 (Humans and the Natural World); PHIL 310 (Development Ethics); PHIL 493 (Ethics and the Environment); RELS 235 (Religion and Environment)</p>	
<p>Electives: 18.0 units</p>	